

III.—Notes on the Tabanidæ of the Australian Region.

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ACANTHOCERA, Macquart.

Hist. Nat. Dipt. i. p. 209 (1834); Loew, Dipt. Sudafrik. p. 31 (1860);
 Schiner, Reise Novara, p. 95 (1866); Ricardo, Ann. & Mag. Nat.
 Hist. (7) xiv. p. 362 (1904).

Acanthocera australis, ♀, sp. n.

Type (female) and another female from Kuranda, N. Queensland, in German Ent. Museum.

This species bears a strong general resemblance to *Acanthocera longicornis*, F., especially in the markings of the wings, and, no doubt, belongs to this genus, though, unfortunately, the third joint of the antenna is destroyed in both specimens. As all the known species of the genus, about seven in number, come from South America, this is the first record of the genus in Australia.

A reddish-brown species with two grey or white-haired stripes on abdomen at base. Antennæ and legs yellowish. Wings dark brown, with the posterior border from apex to anal cell and a few spots clear.

Length 14 mm.

Face shining reddish brown, in the centre raised as a large tubercle; cheeks black with bluish-grey tomentum. Beard composed of sparse brown hairs. Proboscis short, stout. Palpi nearly as long, black, stout at base, ending in a fine point, with black pubescence. Antennæ reddish yellow, the first joint two and a half times as long as the second joint, both with a few short black hairs, situated on a reddish tubercle forming the subcallus. Forehead parallel, about five times as long as it is broad, blackish, with grey tomentum; the frontal callus shining black, tuberculous, pear-shaped, reaching the eyes, and ending in a short point. Eyes (when moistened) show two bright green stripes forming a loop on the middle of the eye, not quite reaching the border, the first one starting from the base of the subcallus and the second one just beyond it; they are about $\frac{1}{2}$ mm. in width each.

Thorax mahogany-red with two narrow grey tomentose stripes. Scutellum same colour. Abdomen long and narrow, the same colour on the two basal segments, the remaining segments becoming darker, the posterior borders of the first two segments bordered with white hairs on a grey tomentose

ground-colour; dorsum otherwise appears devoid of pubescence; underside the same, a little darker. *Legs* mahogany-brown, the fore femora and the tibiæ dull reddish yellow; the tarsi the same, becoming darker on their apical joints. *Wings* dark brown, with clear streaks in the base of the marginal cell, in the upper part of the submarginal cell, in the two basal cells, and in the discal cell, and smaller ones in the anal and fifth posterior cells, but more marked than these is one clear spot in the base of the first basal cell and one clear spot in the apices of each basal cell; all the posterior border of wing from the apex to the anal cell is clear, the brown colouring continuing in a straight line to the fork of the third vein and then forming a straight line across the top of the discal cell to the apex of the anal cell, the axillary angle beyond is clear.

Species of Tabanus from New Zealand.

Mr. Arthur White informs me that the fauna of New Zealand has little or no relationship with that of Australia.

Very few species of the genus have been recorded from these islands, and the material in the Brit. Mus. Coll. is very scanty.

Hutton, in *Trans. New Zealand Inst.* i. p. 11, 1900, gives a list of eight species which are now reduced to six as follows:—

- Tabanus sordidus*, Wlk.,
- Tabanus transversus*, Wlk.,
- Tabanus oplus*, Wlk.,
- Tabanus sarpa*, Wlk.,
- Tabanus bratnankii*, Norvicki,
- Tabanus viridis*, Hutton,

and *Tabanus truncatus*, Wlk., which is *not* a synonym of *Tabanus sarpa*, Wlk., as Hutton states in his list.

His species, *T. viridis*, is unknown to me, as is *T. bratnankii*, though I have studied the fairly full description by the author, who says the prevailing colour is isabelline, the eyes hairy, the forehead of female narrow and parallel, with a small yellowish-coloured frontal callus, antennæ reddish, the last joint black, the legs red with black femora, abdomen dark brown with an uninterrupted median stripe, and angles and sides of segments leather-yellowish in colour; the length is given as 13–14 mm., and the locality Queensland.

T. transversus was included in the species from Australia by an oversight in my paper in *Ann. & Mag. Nat. Hist.* (8)

xiv. p. 390 (1914), *T. sordidus* and *T. transversus* belong to Group VII., *T. truncatus* to Group IX., and *T. sarpa* and *T. oplus* to the subgenus *Therioptectes*, or hairy-eyed Group XI.

Tabanus sordidus, Walker, List Dipt. v. p. 256 (1854).

Type (female) from New Zealand (presented by Col. Bolton).

A species bearing some resemblance to *Tabanus latifrons*, Ricardo, but distinguished by the wider forehead and square frontal callus, and by the black broad stripe on the abdomen reaching the apex. *Antennæ* incomplete. *Legs* blackish.

Length 17 mm.

Face blackish with grey tomentum and long pale yellow hairs. Beard more yellow in colour. *Palpi* reddish yellow with black pubescence, large and stout, ending in an obtuse point, almost the same width throughout. *Antennæ* incomplete, the first two joints dull reddish with black hairs. *Eyes* bare. *Forehead* broad, about four times as long as it is broad anteriorly, covered with yellowish-grey tomentum; frontal callus blackish brown, almost square, and nearly touching the eyes; the lineal extension spindle-shaped, on the vertex appears a small black callus with what appear very like three small ocelli, but the species is a genuine *Tabanus*. *Thorax* black, denuded. Walker describes it as having three hoary stripes, sides with pale yellow hairs, and black hairs above the wings. *Scutellum* black. *Abdomen* tawny, the same colour as the first segment, almost wholly black, the three following segments each with a large blackish square spot not quite reaching the posterior border of segment, the last three segments almost wholly black; pubescence on dorsum black; underside tawny black at the extreme apex only. *Legs* blackish, incomplete, Walker says the posterior tibiae are tawny. *Wings* grey, tinged with brown on fore border and along all the veins; no appendix; veins brown.

Tabanus truncatus, ♀, Walker, in Newman, Zoologist, viii. Appendix lxx. (1851), et List Dipt. v., Suppl. i. pp. 255, 451 (1854); Hutton, Cat. New Z. Diptera, &c. 20 (1881), et Trans. New Z. Inst. p. 13 (1900).

Mesomyia maoriorum. ♂, Bigot, Mém. Soc. Zool. Fr. v. p. 621 (1892); Ricardo, Ann. & Mag. Nat. Hist. (7) viii. p. 297 (1901).

Type (female) from New Zealand (Col. Bolton) and others; also a female from Wellington in the Cockayne Coll. Type

(male) from New Zealand (*Col. Bolton*) and others in the Cockayne Coll. from Wellington.

A small blackish species with a median stripe of grey triangular spots on the abdomen. Forehead in female broad. Palpi reddish yellow, cylindrical.

Length (males) from 7-8 mm.

Length (females) from 7-10 mm.

Female. Face covered with ashy-grey tomentum and with black hairs. Beard white. Palpi yellowish covered with thick black pubescence, almost the same width throughout, ending in an obtuse point. Antennæ blackish, the first two joints paler with black hairs; the third joint with a small tooth represented by an angle in the middle of the first division. Forehead same colour as face, with black hairs; narrower at vertex, about twice as long as it is broad anteriorly; frontal callus brown, small, nearly square, with a short lineal extension, far from the borders of the eyes, which are bare. Thorax blackish, with two grey tomentose stripes; shoulders also grey, some appressed fulvous pubescence on dorsum and a few longer black hairs. Scutellum blackish covered with grey tomentum. Abdomen blackish, the triangular spots present on the second, third, and fourth segments, largest on the second segment, the segmentations grey tomentose, the pubescence on the spots pale fulvous, elsewhere chiefly black; underside with grey tomentose bands. Legs reddish yellow, the femora reddish brown, some fulvous pubescence on the middle and hind tibiæ, elsewhere chiefly black. Wings clear, with yellowish-black veins; no appendix; all posterior cells widely open.

Male is identical. Palpi with long black hairs. Face with thick black pubescence, some black hairs present on the subcallus and between the eyes reaching to the vertex. Eyes with the upper facets only a little larger than those of lower part of eyes; in undenuded specimens the pubescence on abdomen is thick, and a distinct triangular spot is present on the fifth segment.

Bigot's type, as published by me in 1900, is identical with the male specimens of this species, but *Tabanus sarpa*, Walker, is not identical, as affirmed by Prof. Hutton, who no doubt had not seen the types.

Tabanus oplus, ♂, Walker, List Dipt. i. p. 175 (1848) [sine descr.]; Newman, Zoologist, viii. Appendix lxx. (1850), et List Dipt. v., Suppl. i. p. 255 (1854).

Tabanus gravis, Hutton, Trans. New Z. Inst. xxxiii. p. 13 (1901).

Male (type) from New Zealand (presented by Dr. A.

Sinclair) and other males from New Zealand (*Col. Bolton and H. Clark*). One male from Wellington in the Cockayne Coll. One female from New Zealand (*Col. Bolton*). Two females from Wellington in the Cockayne Coll.

A small species with a reddish-yellow abdomen marked with median black spots. Antennæ slender, the first two joints yellowish, the third black. Palpi and legs yellow.

Length (male type) $10\frac{1}{2}$ mm., others 12-13.

Female (type) $10\frac{1}{2}$ -12 mm.

♂. *Face* covered with yellowish-grey tomentum and with short brown hair on cheeks, centre of face depressed. *Palpi* pale yellow, the second joint with black hairs and long white hairs at the apex. Beard white, thick. *Antennæ* reddish yellow, the third only so at its extreme base, then blackish; the first two joints with thick black pubescence, the third joint slender, with a distinct tooth or angle, on which a few hairs are apparent. *Eyes* with short sparse pubescence, the large facets only cover about half the surface of the eye, and are not much larger than the others; they do not quite reach the hind border.

Thorax raw umber, covered with rather dense pale pubescence; hairs on shoulders and at sides dark and longer; breast with thick white pubescence. *Scutellum* identical. *Abdomen* amber-brown; the black spot on the first segment very small, on the second one oblong, almost attaining the width of segment, those on the next two segments more square as also on the remaining segments; in some of the males the apex is almost entirely blackish; all segmentations rather paler; pubescence on dorsum short, black, becoming longer at the apex and at sides; underside paler. *Legs* pale amber-brown, with long pale hairs on the coxæ and femora and underside of tibiæ, elsewhere black, in some of the males the femora are blackish or reddish brown on their basal halves. *Wings* large, clear, pale yellow on the costal border; stigma pale yellow; veins yellow, those on the fore border black and stouter.

♀. Identical, hairs on face and antennæ not so numerous. *Palpi* slender, ending in a long point, yellow; the first joint with long yellowish hairs, the second joint with black pubescence, two-thirds the length of proboscis. *Forehead* slightly narrower at vertex, about five times as long as it is wide anteriorly; the frontal callus pale yellow or brown, small, with a lineal extension. *Abdomen* with less pubescence. In the females from Wellington the black median stripe is not very distinct, and in all the females it is narrower and composed of ill-defined narrow spots forming a stripe, the apex not darker.

Tabanus sarpa, ♀, Walker, List Dipt. i. p. 175 (1848), et v. Suppl. i. p. 255 (1854).

Tabanus impar, ♀, Walker, Newman, Zoologist, viii. Appendix lxxi. (1850), et List Dipt. v., Suppl. i. p. 255 (1854).

Female (type) from New Zealand, 44-99 (*Peterin*), and another 97, 86 (*H. Clark*), also from New Zealand. Male (type of *impar*) from New Zealand.

A moderate-sized blackish species with well-marked grey median spots on abdomen. Forehead with a large triangular dark callus. Legs and antennæ blackish.

Length 14-15 mm. (females).

Hind tibiæ with spurs!

♀. Face covered with ashy-coloured tomentum and white and brown hairs. Beard thick, white. Palpi small, reddish yellow, with grey tomentum and black pubescence, ending in a point. Proboscis rather long for a *Tabanus* species, probably 3 mm. Antennæ with the first two joints reddish yellow and with black hairs, the third black, with a distinct tooth; shape of antennæ normal. Forehead a little narrower at vertex, about four times as long as it is broad anteriorly; the large callus almost reaching the border of eyes, with a short lineal extension, or, rather, ending in a short point, in the other female it is more drawn out; colour same as face. Eyes with short but thick pubescence. Thorax blackish brown, with four narrow grey tomentose stripes, the median ones broken off at the middle suture, with two spots on posterior border almost connecting with them; shoulders reddish with black hairs; pubescence on thorax appressed and pale, with some black hairs. Scutellum same colour as thorax, with a grey outer border fringed with long black hairs. Abdomen blackish, the four grey median spots on the second and following segments very distinct; fore borders of second segment also grey tomentose; pubescence black, on spots white; underside with grey tomentum. Legs blackish, tibiæ reddish brown, some white pubescence on femora and on tibiæ, elsewhere black. The hind tibiæ have two distinct spurs, but as no ocelli are present and the shape of antennæ, forehead, and palpi is very similar to species of *Tabanus*, it seems inadvisable to create a new genus for it at present. Wings clear; veins and stigma brown.

♂. Is identical, but the abdomen much more fulvous, leaving the central part black. Eyes appear to have the facets all equal, or if any larger ones are present they are not very noticeable.

PANGONINÆ.

The genus *Pangonia* in *sensu stricto* is only represented in Australia by two or three species, all doubtful.

The other three subgenera are fairly well represented, *Corizoneura* having the smallest number of species. The material in the Brit. Mus. Coll. does not increase very largely, which is a disadvantage, as many of Walker's types are old and worn.

For a list of the Australian species of Pangoninæ, see Ricardo, Ann. & Mag. Nat. Hist. (7) v. p. 112 (1900). To *Erephopsis* species therein named, *E. maculipennis*, Macq., *E. novæguineensis*, Ricardo, and *E. bancrofti*, Austen, must be added.

To *Diatomineura* species add *D. ruficornis*, Macq., *D. hirticeps*, Nowicki, *D. ricardoi*, Hutton, and *D. dives*, Macq. (*Corizoneura*).

From *Corizoneura* species delete *C. angusta*, Macq., *C. trichocera* and *C. rubiginosa*, Bigot, belonging to other genera. *C. alternans* and *C. sulcifrons*, Macq., are probably South African species, see Austen, 'Blood-sucking Flies,' p. 53 (1909), which with synonyms reduces the old species of *Corizoneura* from Australia to seven.

PANGONIA, Macq.

Subgenus *Erephopsis*, Rond.

Erephopsis gibbula, ♀, Walker, List Dipt. i. p. 140 (1848); Ricardo, Ann. & Mag. Nat. Hist. (7) v. pp. 112, 117 (1900).

Erephopsis vertebrata, Bigot, Mém. Soc. Zool. de France, v. p. 618 (1892).

Diatomineura carnea, Bigot, l. c.

The type came from West Australia, Bigot's two types from Australia. The identity of the latter types is self-evident at a glance—it is difficult to understand how the author made the mistake!

It is a small species, at once distinguished by the unusual shape of the second joint of the palpi, which is shorter than the first one, short and broad, spoon-shaped, reddish in colour; the first joint yellower, with long whitish hairs below, the second joint with short black pubescence. *Face* is very protuberant, reddish with black hairs. *Beard* yellow. *Antennæ* reddish. *Forehead* a third wider anteriorly, reddish covered with ashy-grey tomentum. *Ocelli* present. *Eyes*

hairy. *Thorax* chestnut-brown with four distinct grey tomentose stripes, some whitish hairs at base of wings. *Abdomen* appears blackish brown, covered with ashy-grey tomentum which leaves a median stripe of the ground-colour free; pubescence short, black. *Legs* reddish, posterior ones brown. *Wings* clear, reddish yellow, the first posterior cell closed.

Length of *E. vertebrata* $9\frac{1}{2}$ mm., of *D. carnea* 11 mm.

Erephopsis tricolor, Walker, List Dipt. i. p. 139 (1848); Ricardo, Ann. & Mag. Nat. Hist. (17) v. pp. 112-117 (1900).

Type (female) from Perth, West Australia (*G. Clifton*), 47, 109; and another female from Kelmscott, West Australia (*Dr. J. Cleland*).

One female from South Perth, W. Australia (*Grant Watson*, per Janson), in Mr. Wainwright's Coll.

This small species may be at once recognized by the dark spots on the *wings*, one round one at the base of fork of third vein and another at apex of discal cell; there are also dark blotches on the cross-veins and the fore border is brown. *Forehead* parallel, covered with ashy-grey tomentum and with an indistinct reddish-brown callus. *Antenna* and *legs* reddish. *Abdomen* blackish with testaceous segmentations.

Erephopsis aureohirta, ♀, Ricardo, Ann. & Mag. Nat. Hist. (7) v. pp. 112, 116, pl. i. fig. 10 (1900).

A series of females in Mr. Wainwright's Coll. from Herberton and Kuranda, Queensland (*F. P. Dodd*).

The *forehead* in this species is almost half as wide again anteriorly as it is at vertex, covered with yellowish-brown tomentum and with some short black hairs; frontal callus indistinct, small, pear-shaped, reddish or brown, when denuded a long dark stripe is visible.

Length of these females 14-16 mm.

E. maculipennis, Macq., from east coast of New Holland, must be nearly allied to this species, but the description speaks of the legs being chiefly reddish; the wings have an appendix, and white hairs are present on the sides of most of the segments; the length given is 14 mm., and black median spots are said to be present on the first two segments.

Erephopsis gemina, ♀, Walker, List Dipt. i. p. 138 (1848), [*Pangonia*]; Ricardo, Ann. & Mag. Nat. Hist. (7) v. pp. 112, 117 (1900).

Pangonia testaceomaculata, ♂, Macq. Dipt. Exot., Suppl. iv. p. 325 (1849).

Type (female) from Perth, W. Australia (*G. Clifton*), 47, 109; another female from Australia (purchased, Argent, 50. 1. 7); two females from Perth (*H. W. J. Turner*), 93. 198; one female from Sydney, New South Wales (purchased, Lambert, 47. 73), all in Brit. Mus. Coll. Two females from South Perth (*Grant Watson*, per Janson), in Mr. Wainwright's Coll. *P. testaceomaculata*, male (type), in the Verrall Coll.

♀. A reddish-brown species with reddish legs, black antennæ, short stout palpi, very hairy face and forehead, the latter broad. Wings with the posterior cell closed or very narrow, the cross-veins slightly clouded.

Length 15 mm. (type), others 12–15 mm.

Face reddish, covered with grey tomentum and with long brownish hairs, some white ones intermixed, face slightly convex, cheeks with ashy-grey tomentum. Beard yellowish white. Proboscis over 4 mm. long. *Palpi*: the second joint orange-rufous with black pubescence, broad, short, and stout, ending in a short point. *Antennæ* blackish, the first two joints with some grey tomentum and many long black hairs on their upper and lower sides. *Eyes* with very distinct pubescence. *Forehead* reddish, with some grey tomentum and black pubescence, with a tubercle of the same colour representing the frontal callus, quite a third broader anteriorly than at vertex. *Thorax* blackish brown, with two lincal grey tomentose stripes on the anterior half of the dorsum only, sides with whitish long hairs reaching the scutellum; black on the shoulders, some long black hairs on the dorsum of thorax and on scutellum. *Abdomen* reddish on the first three segments; a transverse median black spot on the first segment, on the second an almost square black median spot, the third black on its anterior border, the remaining segments blackish, their posterior borders reddish or slaty grey, with traces of median whitish-haired small spots on the apical segments; pubescence on dorsum black, at sides chiefly white mixed with some black hairs towards the apex; underside more largely reddish with white pubescence. *Legs* reddish with black pubescence. *Wings* clear, slightly yellow at base and fore border.

♂. Is identical. *Palpi* appear very much the same shape, but smaller, as in the female; the dirty condition of the type makes it difficult to describe them more fully. The white-haired spots on abdomen are very distinct on nearly every segment, the reddish-yellow colour is more predominant, the third segment being entirely so, with the exception of a black spot like that on the second segment.

Length 14 mm.

Erephopsis contigua, ♀, Walker, List Dipt. i. p. 138 (1848) [*Pangonia*]; Ricardo, Ann. & Mag. Nat. Hist. (7) v. pp. 113, 116 (1900).

Type (female) from Australia and another from New South Wales in Brit. Mus. Coll.

A series of females and males in Mr. Wainwright's Coll., from Kuranda, Queensland. (*F. P. Dodd*).

A species with the markings on the wings very similar to those of *E. aureohirta*, Ricardo, but at once distinguished by its smaller size and wholly yellowish legs.

Length of these specimens in Mr. Wainwright's Coll.: females 12½–13 mm.; males 11–12 mm. Proboscis 2¾ mm.

♀. *Face* protuberant, shining in centre, reddish yellow with grey tomentum, divided from cheeks by a deep furrow. *Palpi* orange-rufous, the first joint yellow, the second joint large and wide, concave, tapering to a short point, fringed with black hairs. Beard yellowish white. *Antennæ* orange rufous, the first two joints yellow, with some black hairs, which are long on the second joint. *Forehead* almost half as wide again anteriorly as it is at vertex; reddish, with grey tomentum; when denuded a callus extending to a stripe is visible, the callus being spindle-shaped. *Thorax* reddish brown, with black pubescence; hairs on shoulders black, then yellowish, reaching to base of thorax; dorsum with some grey tomentum. *Scutellum* identical. *Abdomen* ferruginous, the first two segments yellowish with irregular small black spots; pubescence on dorsum black. *Legs* pale yellow, the tarsi a little darker; pubescence black. *Wings* with a fore border and apex and two dark bands brown—in fact, the whole wing may be described as brown, having the middle of the first posterior and the greater part of the discal cell clear; both the basal cells, with the exception of their bases and apices, clear, also the anal cell clear, and beyond the brown fades away, leaving the axillary angle almost wholly clear; no appendix is present, the first posterior cell is closed at border.

♂. Is similar, facets of eyes almost uniform in size. *Palpi* as large as those of the female, more hairy. *Abdomen* almost wholly yellow on the three first segments, with thick black pubescence at the sides, mixed with some yellow hairs at apex. *Wings* with the first posterior cell just open at border or closed.

Walker, in *Suppl.* v. p. 139 (1854), makes this species a synonym of *Pangonia fuliginosa*, Bois, from New Guinea, but, judging from the description of this last species, he was probably in error.

Erephopsis guttata, Donovan, *Gener. Illustr. Ent. i.*, Hym. et Dipt. (1805); *Wied. Auss. zweifl. Ins. i.* p. 194 (1830) [*Tabanus*]; Guérin, *Voyage de la 'Coquille,' Zool. ii.* p. 289, pl. xx. fig. 10 (1830) [*Tabanus*]; Ricardo, *Ann. & Mag. Nat. Hist.* (7) v. pp. 112, 114 (1900); Froggatt, *Science Bull. New South Wales*, iii. p. 5 (1911) [*Pangonia*].

Pangonia margaritifera, *Wied. Auss. zweifl. Ins. i.* p. 88 (1830); *Macq. Dipt. Exot. Suppl. iii.* p. 8 (1847); *Williston, Kans. Univ. Quart. iii.* p. 191 (1895).

Pangonia albonotata, *Macq. Dipt. Exot., Suppl. v.* p. 40 (1855).

Males and females from Sydney, Brisbane, and Queensland in *Brit. Mus. Coll.*

One female in Mr. French's Coll. from Dandenong Ranges, Victoria.

Macquart's species in the Verrall Coll. is identical. A large black species marked with median white abdominal spots and with white hairs on sides of thorax.

Erephopsis media, Walker, *List Dipt. i.* p. 142 (1848) [*Pangonia*]; Ricardo, *Ann. & Mag. Nat. Hist.* (7) v. pp. 112, 114 (1900).

Pangonia limbinervis, *Macq. Dipt. Exot., Suppl. v.* p. 41 (1855).

Macquart's type in the Verrall Coll. is identical with this species.

Erephopsis cinerea, ♀, sp. n.

Type (female) and another from Swan River, W. Australia (*G. C. Shortridge*), 1906, 293, in *Brit. Mus. Coll.*

A small black species, allied to *E. macroporum*, *Macq.*, in the shading of the wings. *Antennæ*, *palpi*, and *legs* blackish. Length 10 mm. *Proboscis* 2 mm.

Face reddish brown, convex in the centre, with some long

dark hairs on the cheeks. Beard dirty white. *Palpi* small, the second joint shorter than the first joint, broad and concave, ending in a short fine point with long dark hairs below. *Antennæ* blackish, the first two joints with long black hairs. *Forehead* same colour as face, a little wider anteriorly, about five times as long as it is broad, with dark thick pubescence. *Eyes* very hairy. *Thorax*, *scutellum*, and *abdomen* blackish, the thorax with three distinct grey tomentose stripes. *Legs* uniformly blackish brown, and with black pubescence, even on the coxæ. *Wings* grey, more intense in colour in the cells, the first posterior cell closed far from the border; stigma large, brown; veins brown.

Diatomineura auriflua, Donovan, Gen. Illustr. Ent. Hym. et Dipt. (1805) [*Tabanus*]; Wied. Auss. zweifl. Ins. i. p. 194 (1848) [*Pangonia*]; Ricardo, Ann. & Mag. Nat. Hist. (7) v. pp. 112, 119 (1900); Froggatt, Science Bull. New South Wales, iii. p. 5 (1911) [*Pangonia*].

Pangonia solida, Walker, List Dipt. i. p. 141 (1848).

Females from Sydney, New South Wales, or Moreton Bay, Queensland; from Port Stephen, New South Wales, and Tasmania in Brit. Mus. Coll. Two males and three females from Dandenong Ranges, Victoria, in Mr. French's Coll.

Diatomineura jacksoniensis, Guèrin, Voyage de la 'Coquille,' ii. pt. 2, p. 289 (1830); Atlas, Ins. pl. xx. 3; Ricardo, Ann. & Mag. Nat. Hist. (7) v. pp. 113, 118 (1900).

One female from Melbourne (*Braby*), 53, 55 in Brit. Mus. Coll.

Two females from Queensland in Mr. French's Coll.

These females appear to belong to this species, judging from the original description.

Guèrin gives the length as 17 mm.

A stout species with orange-rufous *antennæ*, *palpi*, and *legs*. *Abdomen* mahogany-red with black markings and very narrow golden-haired segmentations, chiefly confined to the middle of the posterior segments. The *wings* are large, grey, with the first posterior cell slightly narrowed at the border; no appendix. The *thorax* is blackish brown, with tufts of yellow hairs at sides and base of wings. The *palpi* are long, almost half the length of the proboscis, the second joint wide and concave at base, ending in a long slender point. *Forehead* parallel, covered with yellowish-grey tomentum and with an obscure ill-defined frontal callus. Beard yellow.

Length of these females 14-16 mm. Proboscis $1\frac{1}{2}$ mm.

Diatomineura clavata, ♂, Macq. Dipt. Exot. i. p. 105 (1838) [*Pangonia*]; Ricardo, Ann. & Mag. Nat. Hist. (7) v. p. 113 (1900).

One female from Victoria (*R. Bakewell*), 59. 24 in Brit. Mus. Coll. Two females from Dandenong Ranges, Victoria, in Mr. French's Coll. One of these latter was identified with the type in Paris by the kindness of M. Surcouf, to whom I sent it for comparison.

The following particulars may be added to the original description of the type (a male):—

Face reddish brown, convex, with grey tomentum and fairly long black hairs bordered by some white ones, the cheeks covered with ashy-grey tomentum and with black pubescence. *Forehead* brownish, with grey tomentum and black pubescence. *Palpi* large, concave on the upper side for more than the apical half, with black pubescence. *Antennæ* dull red, the first two joints covered with grey tomentum, with black hairs; hind part of head with white hairs, at vertex black. Beard yellowish white. Pubescence of dorsum of *thorax* black, at sides and at base of wings and posteriorly white, *scutellum* bordered with white hairs. The white spots mentioned by Macquart as on sides of segments of abdomen are tufts of white hairs at the sides with black hairs above them, the pubescence on dorsum black; the white dorsal spots are indicated on the second, third, and fourth segments; the first segment and anterior border of second are obscurely reddish, the rest of the abdomen bluish black. Pubescence of *legs* black.

Length 14 mm.

Diatomineura brevirostris, Macquart, Dipt. Exot., Suppl. iv. p. 326 (1842) [*Pangonia*]; Ricardo, Ann. & Mag. Nat. Hist. (7) v. p. 113 (1900).

A series of females from Mackay, Queensland (*G. Turner*), 94. 61; from Brisbane (*H. Tryon*), 1907, 285; from Burpengary, Queensland (*Dr. T. L. Bancroft*), 1904, 93; from Kuranda, Queensland (*Dodd*), 1914, 281 in Brit. Mus. Coll.

Three females from Herberton, Queensland, 3000–4000 ft. (*F. P. Dodd*), Dec. 1910, in Mr. Wainwright's Coll.

Macquart's description is as follows:—

“Black. Abdomen red at base. Ocelli hairy. Antennæ and legs red. Wings with no appendix; first posterior cell open. Length 8 mm., ♀. Related to *Pangonia ruficornis* (from Tasmania). Proboscis 2 mm. long, with large terminal lips. Beard yellowish white. Face and anterior part of

forehead tawny, with sparse white tomentum; posterior part of forehead black, with brown tomentum; callus indistinct; ocelli present. Antennæ bright tawny. Eyes with white pubescence, short and indistinct. Thorax (denuded) shining black; a testaceous stripe above the base of wings, with traces of white hairs; sides testaceous, with whitish tomentum. Abdomen (denuded), first segment testaceous, second blackish, with the sides and the posterior border testaceous, the others shining black; underside brown, changing to white, segmentations white. Tarsi brown. Wings at base and on fore border a little reddish; stigma yellow. From the east coast of New Holland. Museum."

This must be very nearly related to *D. ruficornis*, Macq., if not the same; the type of the latter is in the Lille Museum, or was some years ago.

A small reddish-brown species, with yellowish-white tufts of hairs at sides of thorax and base of wings. Frontal callus small, often very indistinct. Antennæ and legs reddish yellow.

Length 9-10 mm.

Face reddish yellow, covered with grey tomentum, and with short black pubescence, centre convex, divided from the cheeks by a deep furrow. Beard yellowish. Palpi orange-rufous, wide at base, ending in a long fine point, with a few black hairs very similar to those of *D. testacea*, Macq., from which species it may be distinguished by its smaller size and darker colouring and tuft-like hairs on thorax. Antennæ same as those of *D. testacea*. Forehead parallel, about four times as long as it is broad, reddish brown, with grey tomentum, which is most noticeable anteriorly; posteriorly the forehead is darker; frontal callus appears as a small round black spot, or, if denuded, as pear-shaped. Eyes with distinct dark pubescence. Thorax mummy-brown, with yellowish-grey tomentum, often appearing as three narrow stripes; shoulders with dark hairs, sides from thence to scutellum with thick yellowish tufts of hairs. Scutellum same as thorax, with some short dark pubescence. Abdomen same colour as thorax, but reddish on sides of first two segments and on posterior borders of the others, with whitish- or yellowish-haired median spots from the first or third segment to apex, and fringes of short yellow hairs on the posterior borders of the fifth and sixth segments at least; underside covered with yellowish-grey tomentum. Legs uniformly reddish yellow. Wings clear, yellowish at base and on fore border; veins reddish yellow; no appendix present; first posterior cell widely open.

Diatomineura violacea, Macquart, Dipt. Exot., Suppl. iv. p. 326, pl. ii. fig. 3 (1849) [*Paugonia*].

Two females from Kuranda, N. Queensland (*F. P. Dodd*). Presented by F. H. Taylor (1914). In Brit. Mus. Coll.

Three females from Cairns, N. Queensland, 1907.

One male (type) from Herberton, in German Ent. Museum Coll.

The type was described as from Tasmania. Macquart's description does not altogether suit these specimens, as he makes no mention of the lighter colour of legs, only alluding to the knees as a little testaceous, and his figure of the head shows the palpi as slender, whereas in these they are very broad. However, I have little doubt they are this species. It is just possible that the locality specified may be incorrect, as Mr. A. White writes to me that in his three years' collecting in Tasmania he has only come across three species of *Paugonia*, and this is not one of them.

A small metallic-blue species with bright reddish-yellow antennæ and palpi.

Length 8 mm.

♀. *Face* dark, with some grey tomentum and with black pubescence. Beard blackish (Macquart speaks of it as tawny). Proboscis 2 mm. long. *Palpi* short, reddish yellow, the second joint broad, ending in an obtuse point, the upper edge curved. *Antennæ* reddish yellow, the first two joints yellowish, with black hairs. *Eyes* hairy. *Forehead* parallel, about five times as long as it is broad, covered with grey tomentum and some short dark hairs; frontal callus small, oblong, not reaching eyes, with a lineal extension. Ocelli present. *Thorax*, *scutellum*, and *abdomen* blue, metallic, shining, some traces of grey tomentum on the thorax and also on the underside of abdomen. *Legs* blackish, all the tibiæ and tarsi a dull yellowish in the specimens from Cairns and Herberton. *Wings* large, extending far beyond the abdomen, clear; stigma yellowish; veins brownish; first posterior cell open, but slightly narrowed at border.

♂. Is similar, the black hairs on the face are very long and thick, and also numerous on the first two joints of antennæ. *Palpi* yellow, with thick black pubescence. *Legs* blackish, the pulvilli very much larger than in female, with abnormal bright yellow prolongations four or more in number.

Diatomineura testacea, ♀, Macq. Dipt. Exot. i. p. 103 (1838)
[*Pangonia*]; Ricardo, Ann. & Mag. Nat. Hist. (7) v.
p. 113 (1900).

This species and the two following new species, *D. montana* and *D. inflata*, are all nearly related, with abdomen almost wholly reddish yellow; wings clear, with no appendix. Antennæ and legs yellow. The species may all be recognized by the different form of the palpi in each.

Macquart's type is probably lost. The following is his description:—

“Testaceous. Antennæ red. Eyes hairy. Legs red. Wings with no appendix; the first posterior cell half open. Length 12 mm., ♀. Proboscis black, 3 mm. long, a little stout, with the terminal lips swollen. Palpi tawny, of the usual form. Face not protuberant, yellowish grey. Forehead brownish tawny, with no callus. Antennæ bright tawny. Ocelli present. Thorax tawny, with brown stripes; sides with yellowish-grey hairs. Abdomen testaceous red, unicolorous; underside a light yellowish grey, a little greenish. Legs tawny. Wings greyish, at base yellowish; the second submarginal cell with no appendix; the first posterior cell half open.”

One male and one female in Brit. Mus. Coll. from Kuranda, Queensland (*F. P. Dodd*), 1914, 281. Two females in German Ent. Museum from Cairns, Queensland, and Kuranda, Queensland (*F. P. Dodd*), Sept. 1910.

A male and female in Mr. Wainwright's Coll. also from Kuranda by the same collector.

The *palpi* are long and slender, more than half the length of the proboscis, wide on the basal half, with the upper border curved, but ending in a fairly long fine point, orange-rufous in colour, with scattered, black, short pubescence. *Face* covered with yellowish-grey tomentum, in the centre raised a little beneath the antennæ, on the lower half more concave than convex, separated from the cheeks by a deep furrow; some long dark hairs are visible on the sides of the centre of face and yellowish hairs on the lower part of cheeks; the beard is also yellowish white.

Antennæ orange-rufous, the first two joints pale yellow, with black hairs. *Forehead* parallel, about five times as long as it is broad, with no distinct callus, but owing to denudation a central black line is often visible; colouring is a shade darker than the face, with some short black hairs. *Eyes* hairy. *Thorax* reddish brown, covered with yellowish-grey

tomentum and appressed fulvous hairs; shoulders honey-yellow, with long brownish hairs; breast with grey tomentum and long whitish hairs. *Scutellum* same as thorax. *Abdomen* amber-brown, paler at the base and darker towards the apex, often with indistinct brownish-red markings; pubescence on dorsum and at sides not noticeable, being very short and black on the dorsum and at the sides, only longer towards the apex; underside as described by Macquart. *Legs* uniformly yellowish, with black pubescence. *Wings* clear yellow at base and on fore border; in most of the specimens the first posterior cell is a little narrowed at border.

Length from 12 mm.; length of proboscis 2 mm.

♂. *Face* not raised so much beneath the antennæ, hairs rather longer and thick; palpi conical, with short black pubescence. *Eyes* with large facets taking up two-thirds of the surface, starting from the base of subcallus and reaching the vertex. *Wings* yellowish on the fore border and at base.

Diatomineura plana, Walker, List Dipt. i. p. 144 (1848);
Ann. & Mag. Nat. Hist. (7) v. pp. 113, 118 (1900).

Diatomineura nigricornis, Bigot, Mém. Soc. Zool. de France, v. p. 614 (1892).

Type (female) from Australia in Brit. Mus. Coll.

Bigot's type, from Australia, in poor preservation.

A medium-sized blackish species, with ashy-grey tomentum on face and forehead. Antennæ and palpi reddish yellow. Abdomen with all segmentations yellow- or white-haired.

Length 12 mm.

Face very protuberant, tomentum on lower part yellowish grey; dark hairs on central protuberant face, cheeks almost bare. Beard yellowish white, thick. *Palpi* reddish yellow, the second joint broad at base, tapering to a long point. *Antennæ* with the first two joints blackish, covered with grey tomentum, and with black hairs. *Forehead* parallel, with fairly thick black pubescence; no callus visible. *Eyes* with pubescence thickest on the lower half, reddish, with some white hairs. *Thorax* blackish, covered with appressed fulvous hairs and longer black ones towards the sides, longer white hairs on anterior part of dorsum; two indistinct stripes are visible, with grey tomentum; shoulders reddish, with dark hairs, sides with tuft-like yellowish-white hairs continued to base of scutellum, which has also a fringe of shorter hairs on its posterior border. *Abdomen* blackish brown, the pale-coloured hairs on segmentations nearly a third of the width

of the segment, median spots probably well developed in fresh specimens; underside greyish yellow, with short white pubescence. *Legs* blackish, the tibiæ reddish, pubescence black; fore coxæ with very thick yellowish-white hairs; all femora with some pale pubescence. *Wings* clear, the first posterior cell slightly narrowed at border; veins reddish yellow at base and on fore border, darker at apex; stigma yellowish; no appendix.

Bigot's type is in such bad condition, it is difficult to distinguish any pubescence on the eyes, and the wings have an appendix; the first posterior cell is also rather narrower at border. In spite of these differences, it is so like the Walker type in shape of forehead and face, and is so exactly similar in the abdomen, that there is little doubt of its being identical with *D. plana*.

Diatomineura crassa, Walker, List Dipt. i. p. 144 (1848); Ricardo, Ann. & Mag. Nat. Hist. (7) v. pp. 113, 120 (1900).

Pangonia aurata, Macq. Dipt. Exot. i. p. 104, pl. xv. fig. 1 (1838).

Type (♀) from ? Australia, and another from between Sydney and Moreton Bay (*Stutchbury*), 56. 94; and males from New South Wales, South Queensland, in Brit. Mus. Coll.

Two males from Katabomba, Blue Mts., New South Wales, 3400 ft. (*Dodd*), 1912, in German Ent. Museum.

A small blackish species, with white- or pale yellow-haired median spots on the second, third, and fourth abdominal segments, the last two or three segments almost wholly covered with golden-yellow hairs and a patch of white hairs on the sides of the second segments; the males have the abdomen largely fulvous in colour.

Pangonia aurata, Macq., from the description is probably identical with this species, but, not having seen the type, Walker's name is retained.

Diatomineura gagantina, Bigot, Mém. Soc. Zool. Fr. v. p. 620 (1892).

Diatomineura minima, Ricardo, Ann. & Mag. Nat. Hist. (7) v. p. 119 (1900).

Having seen Bigot's type, I find my species is the same.

The types of *D. minima* in Brit. Mus. Coll. came probably from Moreton Bay, Queensland, others from Queensland. There are three females from Herberton and Kuranda and

one male from Herberton, Queensland, in the German Ent. Museum.

This small, narrow-bodied, black species with dark wings is not at all a typical species of *Diatomineura*.

Diatomineura montanus, ♀, sp. n.

Type (female) and another female from Katoomba, Blue Mts., New South Wales, 3400 ft. (*Dodd*), 1912, in German Ent. Museum Coll. One female from Dandenong Ranges, Victoria, in Mr. French's Coll.

This species may be distinguished from *D. testacea*, Macq., by the yellowish tufts of hair on thorax at base of wings, by the protuberant face, and by the palpi, which are broader at the base and, perhaps, a little shorter, and the first posterior cell of wing is widely open.

Length 3 mm.; length of proboscis 2 mm.

Face protuberant for its whole length, reddish, covered with yellowish-grey tomentum, with short brown hairs. *Palpi* and *antennæ* the same colouring as *D. testacea*. *Forehead* very slightly narrower anteriorly; no callus is apparent; reddish brown, covered with tawny tomentum with short black hairs. *Eyes* hairy. *Thorax* much the same colouring as *D. testacea*, but more reddish; shoulders with long yellowish-white hairs which reach the base of scutellum. *Abdomen* more reddish-looking, partly by reason of the pubescence, which is reddish, short, and rather thick on dorsum. *Legs* a shade darker than *D. testacea*. *Wings* clear, with yellowish veins and stigma, very slightly yellow at base and on fore border.

Diatomineura inflata, ♀, sp. n.

Type (female) from S. Queensland (*Dr. T. L. Bancroft*), 1908, 72, and other females from unknown localities.

This species may be distinguished from *D. testacea*, Macq., by its larger size, its more protuberant face, and more particularly by the shape of the short stout palpi. The forehead is also not parallel, but wider anteriorly.

Length from 15 mm.; length of proboscis 3 mm.

Face reddish, covered with yellowish-grey tomentum and with some black hairs intermixed with a few white ones; face protuberant, separated from the cheeks by a deep furrow. *Palpi* orange-rufous, with black hairs on the sides and at apex, short, stout, almost conical-shaped. Beard pale yellow. *Antennæ* orange-rufous, the first two joints

pale yellow with black hairs, rather thick and stout. *Forehead* nearly half as wide again anteriorly as it is at the vertex, reddish brown, covered with tawny tomentum; no callus visible, black pubescence visible. *Eyes* hairy. *Thorax* blackish, covered with grey tomentum and with appressed yellow hairs; shoulders yellowish, with black and yellow hairs; sides with long yellowish hairs reaching the base of scutellum, which latter has yellow hairs on its posterior border. *Abdomen* amber-brown, darker at apex, some grey tomentum on first segment; dorsum with short black pubescence, and some few yellowish hairs on centre of first, second, and third segments, but those on the fourth, fifth, and sixth segments much more numerous and noticeable; underside pale reddish yellow, with short yellow pubescence. *Legs* amber-brown, with chiefly black pubescence. *Wings* large, clear, yellowish on fore border; veins reddish yellow; no appendix; the first posterior cell narrowed at border.

Diatomineura pulchra, ♀, sp. n.

Type (female) from Yandina, S. Queensland, Feb. 1900 (*H. Tryon*), 1907, 285, and another female from Burpengary, S. Queensland (*Dr. T. L. Bancroft*), 1904, in Brit. Mus. Coll.

A species near *Diatomineura crassa*, Wlk., but distinct, being smaller in size; the abdominal spots are not white, but a bright golden yellow, with none on the second segment, and the apex is not wholly golden-haired.

A handsome small blackish species, with four golden-yellow-haired abdominal spots, and the same-coloured hairs on the thorax.

Length 11 mm.; proboscis 2 mm.

Face reddish, covered with yellowish-grey tomentum, very convex on the centre, separated by a deep furrow from the cheeks; pubescence brown, but very sparse. Beard yellow. *Palpi* stout, wide at base, ending in a short point, orange-rufous in colour, devoid of pubescence. *Antennæ* orange-rufous, the first two joints reddish, covered with grey tomentum. *Forehead* parallel, about three times as long as it is broad, dark brown in colour, anteriorly covered with yellowish-grey tomentum; frontal callus indistinct and small. *Eyes* with short dark pubescence. *Thorax* blackish brown, with golden-yellow hairs on its anterior border, at sides, and on its posterior border. *Scutellum* also covered with them. *Abdomen* reddish brown, covered with short black pubescence; on the third, fourth, and sixth segments

appears a large golden-yellow-haired, almost square spot, forming a continuous stripe; on the seventh segment only a small spot is seen; underside covered with grey tomentum. *Legs* uniformly reddish yellow. *Wings* clear; veins reddish yellow; no appendix present; first posterior cell very slightly narrower at border.

Corizoneura chrysofila, Walker, List Dipt. i. p. 155 (1848) [*Tabanus*]; Ricardo, Ann. & Mag. Nat. Hist. (7) v. pp. 113, 120 (1900).

Pangonia nigrosignata, Thomson, Eugen Resa, Dipt. p. 451 (1868).

Type (female) and another from Australia, and another from between Sydney and Moreton Bay (*Stutchbury*), 56. 94.

Type (male) from Burpengary, S. Queensland (*Dr. T. L. Bancroft*), 1904.

This handsome species has a blackish abdomen, with broad bands of reddish-yellow hairs on yellow segmentations which are half the width of the segment. *Antennæ, palpi*, and *legs* reddish yellow. *Wings* large, yellowish. In the female the thorax is covered with yellowish tomentum, through which appear four brown stripes. In the male only two short ones at base of thorax are visible. *Forehead* in female is yellowish, broader anteriorly, with a spindle-shaped yellow stripe. *Palpi* same shape and colour as those of *C. fulva*, Macq.; the face is much more protuberant in the female; male with *palpi* the same as those of *C. fulva*, and altogether brighter in colour than the female.

Length 20 mm.; proboscis $1\frac{1}{2}$ mm.

Corizoneura fulva, ♂, Macquart, Dipt. Exot., Suppl. iv. p. 323 (1849); Ricardo, Ann. & Mag. Nat. Hist. (7) v. pp. 113, 120 (1900).

Two males from Sydney (*Lambert*), 47. 73, and from Hunter River, New South Wales. Presented by the Earl of Derby, 44. 105 in Brit. Mus. Coll.

Type (female) from Herberton, N. Queensland (*Dodd*), xii. 1910, 3700 ft., in German Ent. Museum.

Only the male was described by Macquart from the east coast of New Holland.

This large fulvous-coloured species and *Coryzoneura chrysofila*, Walker, from the shape of the palpi and general appearance, will probably require in the future to be placed in a new genus.

C. fulva is at once distinguished by its large size and uniform colouring.

♀. Almost identical with the male, but the *abdomen* s darker in colouring, more reddish brown, with reddish-yellow-haired segmentations. The *thorax* presents a different appearance, being covered with greyish tomentum, through which appear three very distinct reddish-brown stripes a shade darker than the abdomen; in the middle of the median stripe a grey line appears. *Scutellum* covered with greyish tomentum. *Palpi* are very different from others of the genus; the first joint very short, the second long, curved, cylindrical, nearly as long as the proboscis, slightly stouter on basal half, reddish yellow, with black pubescence. *Forehead* almost parallel, a little wider anteriorly, with two round dark spots, and a narrow lineal stripe appears beyond them. *Eyes* quite bare. *Ocelli* present. *Wings* with the first posterior cell wide open and an appendix present.

Length 18 mm. ; proboscis 1 mm.

♂ has palpi rather long, the first joint very stout, the second quite twice its length, cylindrical, with long reddish-yellow hairs. *Antennæ* have the first division of the third joint broad, cone-like in shape, the others small as usual. In the ♀ the third joint is wanting.

Corizoneura neocaledonica, Mègnin, Bull. Soc. Ent. France, (5) viii. p. 145 (1878) ; id. ix. p. 61 (1879) ; Bigot, *l. c.* (6) iii. p. 138 (1883) [*Pangonia*].

Corizoneura leucopicta, Bigot, Mém. Soc. Zool. de France, v. p. 615 (1892).

From Mègnin's description there is little doubt that Bigot described the same species. His type (female) and two other females, all from New Caledonia, are in a very dirty condition.

A robust black species. *Abdomen* with median white spots, halfmoon-shaped, on most of the segments, and others at the sides. *Wings* dark brown, with the first posterior cell a little narrowed at border. *Eyes* apparently bare. *Palpi* black, slender. *Antennæ* black. *Forehead* protuberant, a little wider anteriorly. *Legs* blackish.

Length 15 mm. ; proboscis 4 mm.

The name *leucopicta* appears crossed through, and *melano-leuca*? substituted, on the label.

Corizoneura conspiciua, ♀, sp. n.

Type (female) from Endeavour River, Queensland, in

Mr. French's Coll., and another female from Northern Queensland in Brit. Mus. Coll.

A reddish-brown species with two brown bands on the wings and with bright golden-yellow hairs on sides of thorax, the beard of the same colour. Legs black. Antennæ red. Thorax blackish. Eyes bare. Wings with all posterior cells open.

Length 15 mm. (without proboscis).

It has a general resemblance to *Erephopsis quadrimacula*, Wlk., from which it is distinguished by the bare eyes and open cells of wing. *Pangonia roei*, King, may possibly be identical with this species, but the description is too vague and insufficient to allow of identification.

Face reddish brown, with greyish-yellow tomentum. *Palpi* rather darker, with the base and borders of second joint black, chiefly appearing thus by reason of the short black pubescence, first joint small, the second large, flat, its upper sides straight, the lower one concave, ending in a point. Proboscis long. Beard golden-yellow. *Antennæ*: the first two joints with black pubescence, the third bright red. *Forehead* reddish brown, the space above the antennæ wrinkled, the sides with yellowish tomentum; ocelli distinct on vertex; forehead wide, becoming narrower at vertex. Hind part of head with short black hairs at vertex, otherwise with golden-yellow pubescence. Proboscis long. *Thorax* reddish brown, with some grey tomentum and with golden-yellow pubescence anteriorly, and at sides, above and below the root of wings as long tufts of hair. Sides and breast with golden-yellow pubescence. *Scutellum* the same, with traces of golden-yellow hairs on outer border. *Abdomen* lighter-coloured, with obscure dark brown markings, shining, the pubescence sparse, black, at sides golden yellow; under-side rather redder, almost bare. *Legs* black, the anterior and middle tibiæ reddish brown, pubescence black, traces of golden-yellow pubescence on the coxæ. *Wings* hyaline, brown at the base and along the fore border, the lower brown band crossing the base of the discal cell, reaching to the base of the fifth posterior cell, the upper band reaching from the fore border just across the apex of the discal cell; veins brown; stigma yellow. Halteres pale yellowish brown.

Corizoneura berylensis, ♂ ♀, sp. n.

Type (female) from Herberton, Queensland (Dodd), 11. 1911, 3700 ft.

Type (male) from Kuranda, Queensland (*F. P. Dodd*), 1914. 281. Both in Brit. Mus. Coll.

Males and females in German Ent. Museum from Herberton, Queensland (*Dodd*), 11. 1911, 3700 ft.

Males and females from Kuranda, Queensland (*Dodd*), Sept. 1913.

A small compact species, with a yellowish thorax and reddish-brown abdomen, the latter with yellow-haired median spots forming a stripe. Antennæ, palpi, and legs reddish yellow; forehead parallel, with no frontal callus.

Length, ♀ 8, ♂ 7 mm.; proboscis 1 mm.

♀. *Face* grey, covered with yellowish tomentum and a few short brown hairs in centre, very slightly convex, divided from the cheeks by a deep furrow. Beard pale yellow. *Palpi* tawny, with short black pubescence, the second joint long and slender, wider at base and a little concave, ending in an obtuse point, more than half the length of the proboscis. *Antennæ* xanthine-orange, the last three divisions of the third joint blackish, the first two joints paler, with black hairs; two or three black hairs are visible on apex of third joint. *Forehead* same colour as face, with short black pubescence. *Thorax* buckthorn-brown, covered with short, thick, yellow or yellowish-white hairs, some brown hairs are intermixed with these (in many specimens, owing to denudation, the thorax is nearly bare); sides with longer yellow hairs; breast with whiter hairs. *Scutellum* identical. *Abdomen* raw-umber in colour, with rather thick, short, black pubescence; the yellow-haired stripe is very distinct in good specimens, consisting of a triangular broad spot on the second segment and an almost equal-sized one on the third segment; on the following segments they are wider; under-side paler, covered with short, dense, white pubescence. *Legs* yellow-ochre; the coxæ darker, with long white hairs; the femora with long, fine, black hairs, the posterior pair with rather short, thick, yellow hairs; tibiæ and tarsi with black pubescence. *Wings* brown on fore border and at apex; stigma reddish brown; veins yellowish brown; first posterior cell open at border, sometimes a little narrower. No appendix. The spurs on the hind tibiæ are very stout and long.

♂. Very similar. Beard and palpi lighter-coloured, the palpi small, the usual shape, with black hairs. *Eyes* with facets all equal. *Abdomen* lighter in colour, more the colour of the antennæ, showing a few isolated round black spots on the dorsum; the yellow-haired stripe much less conspicuous, or, rather, non-existent; the dorsum with only black hairs,

and a few yellow hairs on the posterior border of the fourth segment in the centre, and the fifth and sixth segments with their posterior borders wholly yellow-haired; genital organs small but distinct. The tarsi, more especially the anterior pair, with their bases very pale, almost white, then becoming black; this applies only to the last four joints; the first joint is yellow and as long as the four joints together.

IV.—A new Cestode of the Genus *Zschokkeella*.

By H. A. BAYLIS, B.A.

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[Plate VI.]

AMONG a collection of parasitic worms recently presented to the British Museum by Mr. C. M. G. Hoyte, from the Gold Coast, there occurred several well-preserved specimens of a Cestode, stated to have been taken from the intestines of a rat. The precise determination of the host was, unfortunately, not given, but in all probability it was the black rat, *Epimys* [*Mus*] *rattus*, which, as I am informed by Mr. Oldfield Thomas, would be the prevailing species in that locality.

When held up to the light and examined with the naked eye, or with a lens, the hinder segments of the worms appeared to be full of small rounded bodies, which were evidently "egg-capsules." These gave the worms a peculiar "speckled" appearance, and seemed at once to indicate that this was not one of the species of tapeworms commonly occurring in rats. Further investigation showed that it was probably a new species, and I shall give reasons for believing that it belongs to a genus of which only one other species was hitherto known to occur in rodents.

Zschokkeella muricola, sp. n.

EXTERNAL FEATURES.

The specimens measure 9–12 cm. in length, and are of typical Cestode shape, being much flattened dorso-ventrally. The body is narrowed rather suddenly in front, forming a slender neck, but there is a rounded knob-like head. Posteriorly the body is also narrowed, but more gradually. The greatest width (about 3.5 mm.) occurs rather behind the middle of the strobila.